



# FAIRsFAIR

Fostering Fair Data Practices in Europe

## FAIRsFAIR 3rd Synchronisation Force Workshop TFiR Pillar 3: FAIR Ecosystem

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Online, 20th May 2021, 10:00 – 11:30 CEST



# Agenda

Welcome (5 mins)

Recommendations 7-9 (50 mins)

*Break (5 mins)*

Recommendations 22-24 (15 mins)

Whole Pillar Questions (10 mins)

Wrap-Up (5 mins)

## Resources:

- [Collaborative notes](#)
- [Spreadsheet](#)
- [Turning FAIR into Reality](#)
  
- [2020 workshop report](#)

Indication of activities  
per TFIR  
recommendation:



# TFiR Pillar 3: FAIR Ecosystem

## FAIR ecosystem

Rec. 7: Support semantic technologies

**Rec. 7: Support Semantic Technologies**

Rec. 8: Facilitate automated processing

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Rec. 9: Certify FAIR services

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Rec. 22: Use information held in DMPs

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Rec. 23: Develop components to meet research needs

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Rec. 24: Incentivise research infrastructures to support FAIR data

**Rec 24: Incentivise research infrastructure to support FAIR data**

## Rec. 7: Support semantic technologies



### Rec. 7: Support semantic technologies

Semantic technologies are essential for interoperability and need to be developed, expanded and applied both within and across disciplines.

**Action 7.1:** Programs need to be funded to make semantic interoperability more practical, including the further development of metadata specifications and standards, vocabularies and ontologies, along with appropriate validation infrastructure.

*Stakeholders:* Funders; Standards bodies; Coordination fora; Research communities.

**Action 7.2:** To achieve interoperability between repositories and registries, common protocols should be developed that are independent of the data organisation and structure of various services.

*Stakeholders:* Data service providers; Standards bodies.

**Action 7.3:** Field-specific approaches to expressing semantic relationships should be more closely aligned with web-scale technologies and standards.

*Stakeholders:* Research communities; Standards bodies; Coordination fora.



## Rec. 8: Facilitate automated processing



### Rec. 8: Facilitate automated processing

Automated processing should be supported and facilitated by FAIR components. This means that machines should be able to interact with each other through the system, as well as with other components of the system, at multiple levels and across disciplines.

**Action 8.1:** Automated workflows between the various components of the FAIR data ecosystem should be developed by means of coordinated activities and testbeds.

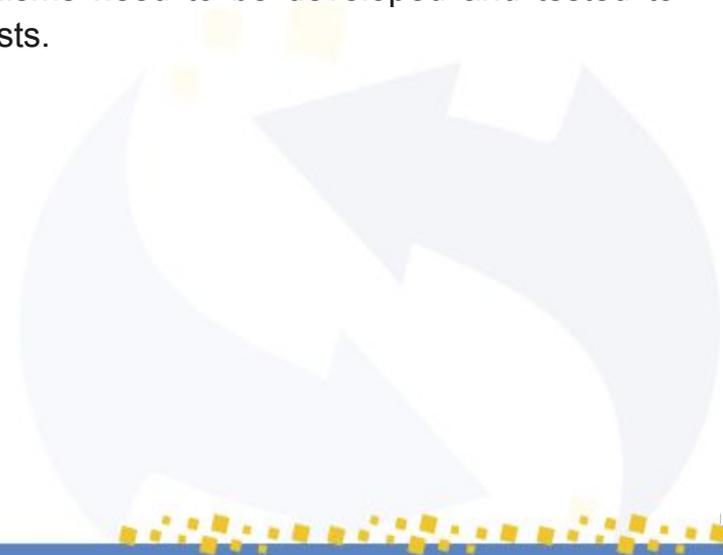
*Stakeholders:* Data service providers; Standards bodies; Coordination fora.

**Action 8.2:** Metadata standards should be adopted and used consistently in order to enable machines to discover, assess and utilise data at scale.

*Stakeholders:* Data service providers; Research communities.

**Action 8.3:** Structured discoverability and profile matching mechanisms need to be developed and tested to broker requests and mediate metadata, rights, usage licences and costs.

*Stakeholders:* Data service providers.





## **Rec. 9: Develop assessment frameworks to certify FAIR services**

Data services must be encouraged and supported to obtain certification, as frameworks to assess FAIR services emerge. Existing community-endorsed methods to assess data services, in particular CoreTrustSeal (CTS) for trusted digital repositories, should be used as a starting point to develop assessment frameworks for FAIR services. Repositories that steward data for a substantial period of time should be encouraged and supported to achieve CTS certification.

**Action 9.1:** A programme of activity is required to incentivise and assist existing domain repositories, institutional services and other valued community resources to achieve certification, in particular through CTS.

**Stakeholders:** Funders; Data service providers; Standards bodies.

**Action 9.2:** A transition period is needed to allow existing repositories without certifications to go through the steps needed to achieve trustworthy digital repository status. Concerted support is necessary to assist existing repositories in achieving certification. Repositories may need to adapt their services to enable and facilitate machine processing and to expose their holdings via standardised protocols.

**Stakeholders:** Data service providers; Institutions; Data stewards.

**Action 9.3:** As certification frameworks emerge for components of the FAIR data ecosystem other than repositories, similar support programmes should be put in place to incentivise accreditation and ensure data service providers can meet the required service standards.

**Stakeholders:** Funders; Data service providers; Standards bodies.

**Action 9.4:** Mechanisms need to be developed to ensure that the FAIR data ecosystem as a whole is fit for purpose, not just assessed on a per service basis.

**Stakeholders:** Coordination fora; Research communities; Standards bodies.

Break (10:55 - 11:00)



## Rec. 22: Use information held in DMPs



### Rec. 22: Use information held in Data Management Plans

DMPs hold valuable information on the data and related outputs, which should be structured in a machine-actionable way to enhance reuse. Investment should be made in DMP standards and tools that adopt common standards and support 'active' DMPs to enable information exchange across the FAIR data ecosystem.

**Action 22.1:** DMPs should be explicitly referenced in systems containing information about research projects and their outputs. Relevant standards and metadata profiles in such systems should consider adaptations to include DMPs as a specific project output entity (rather than inclusion in the general category of research products). This is to allow them to be more easily accessed and used as project outputs, including by machines. The same should apply to all types of FAIR Digital Objects.

*Stakeholders:* Standards bodies; Coordination fora; Data service providers; Funders; Policymakers.

**Action 22.2:** A DMP standard should be developed that is extensible (e.g. Dublin Core) by discipline (e.g. Darwin Core) or by the characteristics of the data (e.g. scale, sensitivity), or the data type (specific characteristics and requirements of the encoding).

*Stakeholders:* Standards bodies; Coordination fora; Data service providers.

**Action 22.3:** Work is necessary to make DMPs machine-readable and actionable. This includes the development of concepts and tools to support the creation of useful and usable data management plans tied to actual research workflows.

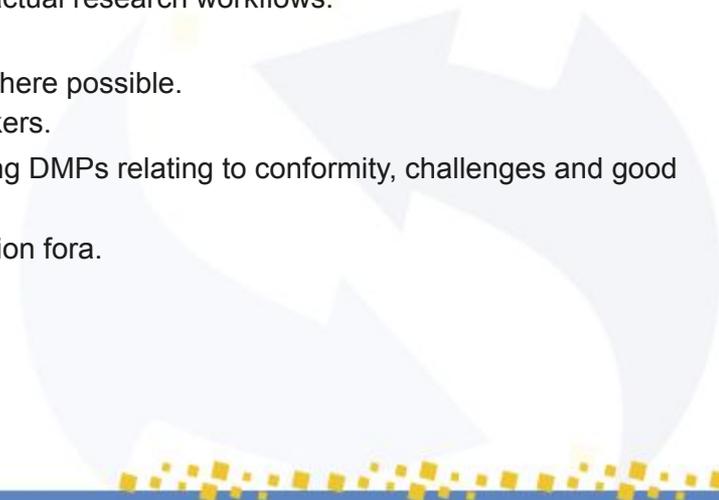
*Stakeholders:* Funders; Coordination fora; Data service providers; Data stewards.

**Action 22.4:** DMPs themselves should conform to FAIR principles and be Open where possible.

*Stakeholders:* Data service providers; Research communities; Funders; Policymakers.

**Action 22.5:** Information gathered from the process of implementing and evaluating DMPs relating to conformity, challenges and good practices should be used to improve practice.

*Stakeholders:* Data service providers; Funders; Research communities; Coordination fora.



## Rec. 23: Develop components to meet research needs



### **Rec. 23: Develop FAIR components to meet research needs**

While there is much existing infrastructure to build on, the further development and extension of FAIR components is required. These tools and services should fulfil the needs of data producers and users, and be easy to adopt.

**Action 23.1:** The development of FAIR-compliant components needs to involve research communities, technical experts and other stakeholders. They should be provided with a forum for the exchange of views.

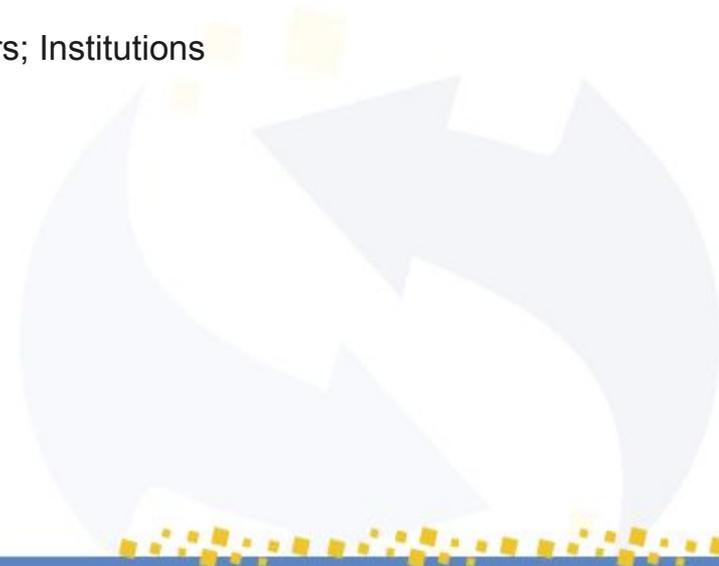
*Stakeholders:* Data service providers; Research communities; Coordination fora.

**Action 23.2:** Engagement of the necessary stakeholders and experts needs to be facilitated with appropriate funding, support, incentives and training.

*Stakeholders:* Funders; Institutions.

**Action 23.3:** FAIR components will need regular iteration cycles and evaluation processes to ensure that they are fit for purpose and meet community needs.

*Stakeholders:* Data service providers; Research communities; Funders; Institutions



**Rec. 24: Incentivise research infrastructures to support FAIR data**



**Rec. 24: Incentivise research infrastructures and other services to support FAIR data**

Research facilities, in particular those of the ESFRI and national Roadmaps, should be incentivised to provide FAIR data by including it as a criterion in the initial and continuous evaluation process. Investments should be made strategically and consider data service sustainability.

**Action 24.1:** The metrics and criteria by which research infrastructures are assessed should reference the FAIR principles, incorporating language and concepts as appropriate, in order to align policy with implementation and to avoid confusion and dispersion of effort.

*Stakeholders:* Funders; Data service providers.

**Action 24.2:** The cost of providing FAIR services should be covered sustainably in the budgets for research infrastructures.

*Stakeholders:* Funders; Data service providers.

**Action 24.3:** A set of case study examples of FAIR data provision should be developed and provided to research facilities.

*Stakeholders:* Funders; Research communities.

**Action 24.4:** Investment in new tools, services and components of the FAIR data ecosystem must be made strategically in order to leverage existing investments and ensure services are sustainable.

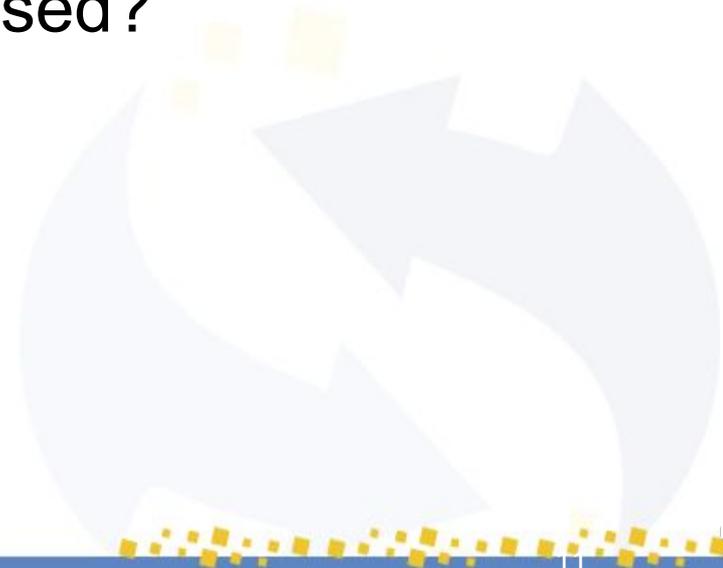
*Stakeholders:* Funders; Institutions.



## TFiR Pillar 2: Overall Questions

What's missing in the recommendations and actions in this pillar?

Any recommendations not addressed?



## Wrap-Up

- Thank you!
- Notes & spreadsheet will remain open until May 24
- Input will be used for a report & ultimately feed into a White Paper
- Engage via the FAIR Data Forum

